REMARKS

Claims 1-17, 19-92 and 94 are pending in the application. Claims xx have been amended. Claims 18 and 93 have been canceled without prejudice or disclaimer. No new matter has been added. Reconsideration of the claims, in view of the comments provided below, is respectfully requested.

Applicants thank the Examiner for indicating that claims 33-57 and 69-85 are allowed. Claims 2, 3, 7-11, 13, 18-32, 62-67, 88, 89, 92 and 93 are objected to in the Office Action. No reason for the objection is provided in the Office Action. It has been assumed here that these claims contain allowable subject matter, and would be allowable if rewritten in independent form to include the limitations of the base claim and any intervening claims.

Rejections Under 35 U.S.C. § 102

Claims 1, 4-6, 12, 14-17, 58-61, 68, 86, 87, 90, 91 and 94 are rejected under 35 U.S.C. §102(e) as being anticipated by Chang-Hasnain et al. (U.S. Patent No. 6,233,263) (Chang-Hasnain). Chang-Hasnain shows, in FIG. 12, a tunable laser (12) directing light through a collimating lens (21) and through a wedged etalon (20) to two photodetectors (24 and 28). In FIGs. 15 and 16, the light is reflected by the wedged etalon (20) to the photodetectors. In FIG. 16, the tunable laser and the photodetectors are shown mounted on the same substrate (66).

To anticipate a claim, the reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Therefore, all claim elements, and their limitations, must be found in the prior art reference to maintain a rejection based on 35 U.S.C. §102. Applicants respectfully submit that Chang-Hasnain does not teach every element of the claims and that the claims are allowable thereover.

Claims 1, 4-6, 12 and 14-16

Independent claim 1 is directed to a laser system that has a laser producing output light and a non-planar etalon coupled to receive at least a portion of the output light. The non-planar etalon has at least one non-planar surface. The output light received by the non-planar etalon is formed into a fringe pattern, and a detector unit includes first and second detecting portions disposed to detect respective first and second portions of the fringe pattern.

First, it is important to note the difference between the terms "non-parallel etalon" (referred to as a NPE in the specification) and a non-planar etalon. These terms are discussed in the Specification at page 9, lines 27-32, where it is stated that the "NPE 112 has surfaces that are non-parallel, and may be wedged or may include at least one non-planar surface. A non-planar surface may assume any type of shape, including spherical, aspherical, toroidal, or cylindrical shapes. If the etalon has a non-planar surface, then it may be referred as a "non-planar etalon." Therefore, a non-planar etalon (NPE) has surfaces that are non-parallel. Since wedged etalons and non-planar etalons contain surfaces that are non-parallel, they are both considered to be NPEs.

There is a distinction between a NPE and a non-planar etalon, however. Non-planar etalons have at least one surface that is not planar, and various examples of non-planar surfaces are given in the specification, *viz.* spherical, aspherical, toroidal and cylindrical. Not all NPEs are non-planar etalons. A wedged etalon has two flat surfaces that are not parallel to each other. Each surface of the wedge is flat and is, therefore planar. Accordingly, a wedged etalon does not contain a non-planar surface, and cannot be considered to be a non-planar etalon.

In the Office Action, it is stated that FIG 2D of the present application shows "a wedged etalon as a non-planar or non-parallel etalon." This is incorrect. The Examiner is referred to FIGs. 2A-2D of the present application, and their description at page 13, line 24 – page 14, line 14. FIGs. 2A-2C show non-planar etalons, and their descriptions refer to the various curved, or non-planar surfaces (224, 242, 262 and 264. FIG. 2D shows a wedged etalon. The description of FIG. 2D states "[i]n FIG. 2D, the probe beam is collimated as it enters the NPE 272. In this particular embodiment, the NPE 272 is wedged, with flat surfaces 282 and 284." Nowhere does the application admit that the wedged etalon is a non-planar etalon. Instead, the application refers to the wedged etalon as being one type of non-parallel etalon. According to the definition of the term "non-planar etalon" provided above, a wedged etalon formed from two flat surfaces cannot be a non-planar etalon.

In view of the preceding paragraphs, it is clear that Chang Hasnain fails to teach a non-planar etalon having at least one non-planar surface. Instead, Chang-Hasnain teaches a wedged etalon, stating that the wavelength selective filter (20) has "a wedge shape with a thickness that varies monotonically in a lateral direction." (col. 8, lines 41-44). In other words, the surfaces of Chang-Hasain's wedged etalon are planar, or flat. The etalon surfaces of Chang-Hasain's wedged etalon are, therefore, not non-planar. Therefore, since Chang-Hasnain fails to teach all the elements of independent claim 1, claim 1 is not anticipated by Chang Hasnain and is allowable thereover.

Claims 4-6, 12, and 14-16 depend from claim 1 and contain additional distinguishing features. These claims are also allowable over Chang-Hasnain.

Regarding claim 6, Chang-Hasnain fails to teach an embodiment where the detector unit detect both light transmitted through the etalon and light reflected by the etalon.

Claim 17

Claim 17 has been amended to include features from canceled claim 18. Since claim 18 was objected to, it has been assumed that claim 18 contains allowable subject matter and so it is understood that amended claim 17 is allowable.

Claims 58-67

Claim 58 is directed to a method of stabilizing the output wavelength of a laser. The method includes forming an etalon fringe pattern using light generated by the laser incident on a non-planar etalon and detecting amounts of light in first and second portions of the etalon fringe pattern. The operating wavelength of the laser is adjusted in response to the detected amounts of light in the first and second portions of the etalon fringe pattern.

Chang-Hasnain fails to teach all the elements of claim 58. In particular, Chang-Hasnain fails to teach forming an etalon fringe pattern using light incident on a non-planar etalon. As has been discussed above with regard to claim 1, Chang-Hasnain fails to teach the use of a non-planar etalon. Instead, Chang-Hasnain teaches the use of a wedged etalon. A wedged etalon only has flat (planar) surfaces, and does not have any non-planar surfaces. Accordingly, Chang-Hasnain's wedged etalon is not a non-planar etalon.

Thus, since the cited art fails to teach all the elements of claim 58, claim 58 is not anticipated and is allowable.

Claim 68

Claim 68 is directed to a wavelength stabilized laser that includes non-planar means for forming an etalon fringe pattern using light generated by the laser and means for detecting amounts of light in first and second portions of the etalon fringe pattern. The laser also includes means for adjusting an operating wavelength of the laser in response to the detected amounts of light in the first and second portions of the etalon fringe pattern.

Chang-Hasnain fails to teach non-planar means for forming an etalon fringe-pattern. Instead Chang-Hasnain teaches a wedged etalon, which does not have non-planar surfaces.

Accordingly, Chang-Hasnain fails to teach all the elements of claim 68 and so claim 68 is allowable over the cited art.

Claims 86, 87, 90 and 91.

Claim 86 has been amended to include elements from canceled claim 93. It was previously indicated that claim 93 was objected to, and it has been assumed that claim 93 contained allowable subject matter. Thus, it is believed that amended claim 86 is allowable over Chang-Hasnain.

Claims 87, 90 and 91 add further distinguishing features to the invention of claim 86, and are also, therefore, allowable.

Claim 94

Claim 94 has been amended to include features like those from canceled claim 93 claim. It is believed that claim 94 is also distinguished over the cited art.

Conclusion

In view of the amendments and reasons provided above, it is believed that all pending claims are in condition for allowance. Applicant respectfully requests favorable reconsideration and early allowance of all pending claims.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicant's attorney of record, Iain A. McIntyre at (612) 436-9610.

Respectfully submitted,

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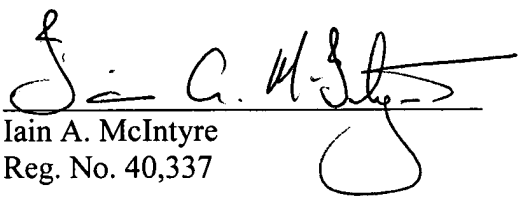
By: 
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